

REMARKS

Claims 1-15 are pending and stand rejected as final. Applicants propose amending the specification to correct an editorial error. Applicants have amended claim 13. Applicants respectfully submit that the amendments to claim 13 do not require any further examination on the part of the Examiner and merely result in additional consideration requirements.

A brief summary of the claimed invention is warranted: Applicants disclose and claim that a physical catalyst in a chemical reaction system can be augmented by the exposure of the reaction system to at least one determined frequency. However, the claims recite not just any frequency, but rather, a very specific frequency (or combination of frequencies). The specific frequency (or combination of frequencies) exposed to the reaction system can, for example, correspond to at least one frequency that is characteristic of the catalyst – that is to say, corresponding to the catalyst's emission or absorption spectrum. In other words, catalysis is frequency specific, and that the frequencies desired to augment the functioning of a physical catalyst are those that are related to its emission/absorption spectrum.

Claims 1-4, 7-13 and 15 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,861,484 to Lichtin et al (hereinafter referred to as "Lichtin"). Applicants respectfully traverse this rejection.

Applicants appreciate the detailed and thoughtful comments from the Examiner. Applicants hereby provide the following response in regard to the §102 rejection involving Lichtin. With regard to independent claim 1, and the claims dependent thereon, Applicants respectfully submit that the disclosure of Lichtin is inadequate. In this regard, Lichtin does not disclose each element claimed in Independent Claim 1. Specifically, Independent Claim 1 requires a step of "determining". The Examiner recognizes that Lichtin is silent regarding "determining" and must interpret the disclosure of Lichtin as *implying* "that a spectrum of the catalyst was obtained by someone and that Lichtin used the results (i.e. "duplicated") to determine the optimal

wavelengths to enhance catalytic activity.” Applicants must respectfully disagree with this conclusion. In this regard, the broad spectrum UV-Vis radiation disclosed in Lichtin is most likely “typical” photochemistry radiation used in the art. The silence of Lichtin regarding the specific claimed requirements of “determining” and “duplicating at least one frequency of said electromagnetic pattern” is fatal for Lichtin being used as a §102 reference. Applicants note the inclusion of the phrase “spectral pattern” in Claim 1 and point out that this phrase is defined at page six of the specification and is reproduced below for the convenience of the examiner.

"Spectral pattern" as used herein means a pattern formed by one or more electromagnetic frequencies emitted or absorbed after excitation of an atom or molecule.

Accordingly, the silence of Lichtin with regard to the steps of “determining” and “duplicating” renders Lichtin an inappropriate §102 reference.

Further, with regard to amended Claim 13, Applicants note that the pending claim language is directed to a very specific set of frequencies. In this regard, Claim 13 now recites:

exposing said chemical reaction system to at least one frequency selected from the group of frequencies consisting of (i) at least one frequency of a duplicated electromagnetic pattern of said at least one physical catalyst, (ii) at least one harmonic frequency of an electromagnetic pattern of said at least one physical catalyst and (iii) at least one frequency which copies at least one mechanism of action of said at least one physical catalyst, said exposing being sufficient to augment said at least one physical catalyst.

Accordingly, Applicants respectfully disagree with the conclusion in the Action that any light that provides a range wavelengths that activates the catalyst will meet the claim limitations. Rather, the specific frequencies recited in claim 13 result from a discovery that catalysis is frequency specific. Those specific frequencies that enhance catalysis are clearly recited in claim 13.

Accordingly, in view of the above remarks, Applicants respectfully request withdrawal of Lichtin as a §102 reference.

Claims 1, 3, 4, 7, 8 and 10-15 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,115,280 to Pratt, Jr. (hereinafter referred to as “Pratt”). Applicants respectfully traverse this rejection.

Applicants again appreciate the detailed comments from the Examiner. Applicants understand the position of the Examiner. However, Applicants respectfully disagree with the position stated in the Action.


Specifically, it is clear from the Action that the Examiner understands the difference between Applicant’s invention, and the invention disclosed in Pratt. The primary issue is, as always, is fairly reflecting the invention in the claims. With regard to Independent Claim 1, and the claims dependent thereon, Applicants believe the invention is definite and is patentable over Pratt. In this regard, the Action states that certain important “argued” features are not recited in the rejected claims. Applicants must respectfully disagree. In this regard, Applicants direct the attention of the Examiner to the use of the language “spectral pattern” reproduced above herein. Spectral pattern is use in connection with “at least one physical catalyst”. Accordingly, determining an electromagnetic spectral pattern of said at least one physical catalyst is very specific and does **not** include the spectra of the entire reaction system of Pratt (as previously argued by Applicants). Accordingly, the claims do **not** read on an entire reaction system but rather, are very specifically directed to the claimed spectral pattern of said at least one physical catalyst.

Moreover, with regard to amended Claim 13, and the claims dependent thereon, Applicants note that the frequencies recited are quite specific. In this regard, the Markush group recited in the claims does not permit the interpretation rendered in the Action. Specifically, by exposing the chemical reaction system to the claimed Markush group of frequencies, a very specific set of frequencies are required to be applied.

In view of the amendments and the above remarks, Applicants respectfully submit that the present application is in condition for allowance. Accordingly, Applicants respectfully request issuance of a Notice of Allowance directed to claims 1-15.

Should the Examiner deem that any further action on the part of Applicants would be desirable, the Examiner is invited to contact Applicants' undersigned representative.

Respectfully submitted,



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